



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

October–December 2018

PROGRAM UPDATE



LM Hosts Joint FUSRAP Meeting with USACE

LM Director Speaks at Fall Tribal
and Intergovernmental Meetings

Visitors Get an Early Look
at Atomic Legacy Cabin

Check out the centerfold that highlights some of LM's significant achievements and milestones over the past 15 years.



Director's Corner



This issue of Program Update commemorates the 15th anniversary of LM. In honor of that milestone, I agreed to sit down for an interview with LM Public Participation Specialist Krystyna Frolich. Not only did it give us a chance to reflect on the past, but also led to discussions of LM's future. I hope you enjoy the interview and I wish you all a Happy New Year.

Until next time...be safe, execute the mission, and take care of each other.

Warm Regards,

Carmelo

Carmelo Melendez

Let's go back in time for a minute. What were you doing on December 15, 2003 (the date on which LM was formally established)?

At that time I was the officer in charge of the construction contracts and environmental office for naval facilities engineering command at Marine Corps Base Camp Pendleton in California. I was probably getting ready to go home on Christmas leave before being deployed to support the global war on terrorism.

You've been the director of LM for two years now. What part of this role has surprised you the most?

Even though much of LM's work is not highlighted front and center within DOE, we contribute to the Department's mission in a very meaningful way. We have a geographically diverse portfolio and a strong focus on stewardship. It has been an intellectual challenge to keep up with all the institutional and technical knowledge in the organization. However, our combined federal and contractor team have really helped me with this. The quality and dedication of LM's personnel has truly impressed me.

Based on speeches you've given at the Intergovernmental Meeting, the Environmental Justice Conference, and at other conferences, it's clear that you're very passionate about LM's mission. Which organizational values resonate with you the most, and why?

By far, what I personally identify with is the promise of protecting human health and the environment at the legacy sites that LM manages. It sounds like a catchy phrase, like a slogan that was developed for a strategic plan, but it's a goal for which I feel personally responsible. It's important that we protect flora, fauna, drinking water, and the environment for communities near our sites today, as well as for future generations.

What do you feel is your greatest accomplishment at LM to date, and why?

The accomplishment I've been most proud of is my track record of being a strong advocate for LM. As the director, I have had opportunities to explain what we do, how we do it, and why we do it to senior leadership, other government agencies, and various stakeholders. It's important to me that people know that LM has a good group of people who care deeply about what we do, and we can deliver.

We can't talk about progress without talking about opportunities for growth. What is our organization not doing today that you think we should be doing?

There are a few things. It's difficult to sum it up in one sentence. First ...

You can read the rest of the interview, including Carmelo's thoughts on LM's accomplishments and opportunities and his long-term vision for the organization, at <https://www.energy.gov/lm/articles/past-present-future-candid-interview-lm-director-melendez>.

LM Goals

- 

1 Protect Human Health and the Environment
- 

2 Preserve, Protect, and Share Records and Information
- 

3 Safeguard Former Contractor Workers Retirement Benefits
- 

4 Sustainably Manage and Optimize the Use of Land and Assets
- 

5 Sustain Management Excellence
- 

6 Engage the Public, Governments, and Interested Parties

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Cover: LM, USACE, and LM Support attendees at the third annual Joint FUSRAP Meeting, October 24-25, 2018. Above: Atomic Legacy Cabin, as it appeared in 1947 (Grand Junction, Colorado)



LM Hosts Joint FUSRAP Meeting with USACE



LM, USACE, and LM Support attendees at the third annual Joint FUSRAP Meeting, October 24-25, 2018.

On October 24-25, 2018, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) hosted U.S. Army Corps of Engineers (USACE) staff from across the country at LM's Westminster, Colorado, office for the USACE Fall Formerly Utilized Sites Remedial Action Program (FUSRAP) meeting and the third annual Joint FUSRAP meeting.

During the USACE Fall FUSRAP meeting, USACE staff discussed their fiscal year 2019 planning and execution activities. The Joint FUSRAP meeting was dedicated to interagency discussions on important FUSRAP issues and opportunities. More than 40 participants attended the meetings with the overall goal of developing and maintaining collaborative interagency relationships with the contractor and federal personnel responsible for all phases of the program.

These annual meetings enhance each agency's perspective on long-term stewardship needs and site-disposition opportunities, while providing a forum for discussing ongoing program issues and potential collaboration on solutions.

"I think the meetings have been very productive," said Gwen Hooten, the LM Resource Conservation and Recovery Act/ Comprehensive Environmental Response, Compensation, and Liability Act/FUSRAP team leader. "We continue to improve the transitioning process to gain efficiencies for both USACE and LM."

The information shared at these meetings assists in ensuring timely and cost-effective site transfers to LM, while supporting the Department's mission to protect human health and the environment.

Over the course of the joint meeting, USACE updated LM on the active FUSRAP sites within the following districts: Philadelphia, Buffalo, Baltimore, and St. Louis. These updates included information on general project status, current remediation activities, stakeholder engagement, and project completion schedules. LM will use the information to improve efficiency for the DOE Life Cycle Baseline and provide details for future long-term surveillance and maintenance planning.

As part of the site updates, USACE invited LM to attend upcoming public meetings to gain insight on community viewpoints and begin fostering stakeholder relationships that can continue into long-term stewardship. Upcoming public meetings or poster sessions are scheduled in Missouri for the Latty Avenue Properties, the St. Louis Airport Site, the St. Louis Airport Site Vicinity Properties, the St. Louis Downtown Site, and in Ohio at the Luckey Site, and the Harshaw Chemical Company.

The afternoon of the second day was dedicated to sharing decisions and successes resulting from the interagency working group collaborations. These working groups focus on improving real property and data management issues related to active FUSRAP site transfers.

The Real Property Working Group developed a common understanding about real property and created real property site checklists for active FUSRAP sites. The checklists will be periodically updated by USACE so DOE can update the Facilities Information Management System database.

The Data Management Working Group is developing a publication, titled *Joint U.S. Army Corps of Engineers and U.S. Department of Energy Office of Legacy Management*

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LM Hosts Joint FUSRAP Meeting with USACE

Information Transition Guidance for the Formerly Utilized Sites Remedial Action Program. The guidance ensures DOE and USACE district-specific data, records practices, and requirements applicable to FUSRAP documents for site transition and transfer are clearly understood by both parties. It establishes methods for accurate and complete information and data transfer between the agencies. Consistent and comprehensive methods are crucial for transferring project information and knowledge as the FUSRAP sites transition from USACE to LM.

In conjunction with the Data Management Working Group discussions, LM Technical Data Manager Joshua Linard presented draft story maps for the Buffalo and Colonie sites in New York. Story maps are intuitive and efficient communication tools for sharing information about a site on a web-based platform. They can include context about site history, remedial actions, final site conditions, pictures, maps, data tables, and links to site-specific documents. They can also be useful in illustrating potential site use to internal and external stakeholders. Linard also demonstrated the Geospatial

Environmental Mapping System (GEMS), which LM uses to publicly share environmental data for sites where active sampling is taking place. The demo covered data filtering, live query, and customization options.

USACE Geospatial/Data Management Specialist Shawn McCabe presented the FUSRAP User Comprehensive Database, which USACE intends to use to manage environmental data. Currently USACE uses both an environmental database and geospatial database, so they are developing one unified database that would allow public access to site information. The database will be captured as a record and will be included in record transfers to LM when a FUSRAP site transfers to LM.

Overall, the October meeting was a resounding success. Multiple opportunities for continued collaboration were identified and agreed upon, including continued discussion and finalization of the Data Management Working Group guidance document, planning for disposition of the DOE-owned FUSRAP sites, LM attendance of USACE public meetings, and site visits to the active FUSRAP sites. ♦



A screenshot example of a portion of the Colonie Site Story Map.



Increased Activity at the Grand Junction Disposal Site



LM Support ecologist Jody Waugh explains disposal cell cover design research.



LM Site Manager William Frazier discusses Grand Junction disposal cell activities with tour participants.



A water tank truck sprays water on the open disposal cell to minimize dust exposure for workers.



Heavy equipment operators mix and compact materials delivered to the Grand Junction disposal cell.

The Grand Junction, Colorado, Disposal Site was busy during 2018.

In late July, the disposal site opened for subcontractor equipment mobilization and inspections. For approximately three weeks, stockpiled materials from the Durango, Colorado, Disposal Site; the Grand Junction U.S. Department of Energy Office of Legacy Management (LM) office facility; and the Tuba City, Arizona, Disposal Site were crushed and blended together to place in the disposal cell.

In early August, the city of Grand Junction began delivering residual radioactive material (RRM) to the cell. Approximately, 4,000 cubic yards were received over a three-week period. During this time, additional materials from the city's ongoing Seventh Street sewer line repair project were also identified and delivered to the cell. Due to this additional material and other pauses in work, materials were received for two weeks longer than originally scheduled. Excellent communication on part of the city, state, LM, and all subcontractors made for an efficient, coordinated, and safe delivery of materials.

The city stopped delivering RRM on September 5, and materials continued to be placed within the cell through the week of September 24. RRM was placed in 12-inch lifts, moisture conditioned, and compacted. A co-polymer sealant was applied over the entire open portion of the cell to control dust, erosion, and stabilize the newly placed RRM. All perimeter roads were final graded, and the site has been shut down for the winter months.

In June, silica exceedance exposures were identified through personal monitoring in one specific piece of heavy equipment, a closed-cab bulldozer used for stockpiling and moving RRM. Additional controls were implemented to address this issue. The controls are working effectively and no additional silica exposures have occurred.

In late August, the 2018 Long-Term Stewardship Conference hosted two disposal site tours. Approximately 85 visitors were able to view real-time, heavy equipment operations within the open cell. Visitors also learned about decontamination processes, site-specific information, and ongoing research studies taking place at the site.

In 2019, more than 8,000 cubic yards of material are expected from the Grand Junction Regional Airport runway project. Additional materials the city receives from the ongoing Seventh Street sewer line repair project and other redevelopment activities over the winter months will be delivered to the disposal site for placement in May 2019. LM plans on having the site open for approximately five months in 2019 to accommodate any unforeseen material. ♦



Butterflies and Families Come Together for Monarch Madness

Families and butterflies converged on the Weldon Spring, Missouri, Site on September 15, 2018, to celebrate pollinators and the annual monarch migration phenomenon. The third annual Monarch Madness event was free and open to the public and attracted more than 700 visitors.

Monarch butterflies and many pollinator species have experienced population declines as humans continue to fragment their habitat. Many of these species require continuous expanses of native prairie plants for nectar and food sources during all stages in their life cycles.

The site's Howell Prairie, a 150-acre native prairie planting, has become an important monarch migration stopover point. The prairie was created at the completion of remedial actions occurring from 1986 to 2001 and is one of the largest plantings of its kind in the St. Louis region. The prairie also provides a great example of beneficial reuse by supporting native wildlife and creating opportunities for community enjoyment.

"Monarch butterflies need success stories like that of the Weldon Spring site," said Judy Meixner, the Missourians for Monarchs event planner.

Almost 40 different educational exhibitors, vendors, and artists contributed to the successful event. Event partners included Missourians for Monarchs, U.S. Department of Energy Office of Legacy Management, Missouri Department of Conservation, Missouri Master Naturalist, Missouri Master Gardener, St. Charles County Parks and Recreation, Ameren, Great Rivers Greenway, and the North American Butterfly Association.

During the event, 156 monarchs were captured by children and families, and then tagged by the Missouri Department of Conservation.

All captured and tagged monarchs were also tested for *Ophryocystis elektroscirrha*, a protozoan parasite commonly known as OE. OE is naturally occurring and infects the *Danaus* species group, which includes monarchs. OE is picked up by the caterpillar as they munch and chew on milkweed plants. They carry the parasite through metamorphosis into adulthood. Caterpillars and adult monarchs usually aren't killed directly by the parasite. However, OE-infected adult monarchs have a harder time surviving and are less likely to complete the migration journey to wintering grounds in Mexico.

Of the 156 monarchs tagged during the event, 23 were infected with OE. This translates to about 14 percent of the captured population, which is typical of the eastern population of monarchs. All tagging teams took extra precautions to ensure no infected monarchs passed spores to other monarchs during capturing and tagging.

Nationwide, researchers are still working on how to best mitigate for OE and they stress the need for continued population growth. Monarchs and all pollinators need native plants to grow populations and guard against natural and man-made impacts.

"Everyone can contribute in saving pollinators by planting native plants at their homes," says Meixner.

Monarch Madness was an overwhelming success in citizen science, beneficial reuse, and family enjoyment in nature. Planning is underway to continue this successful event in September 2019. ❖



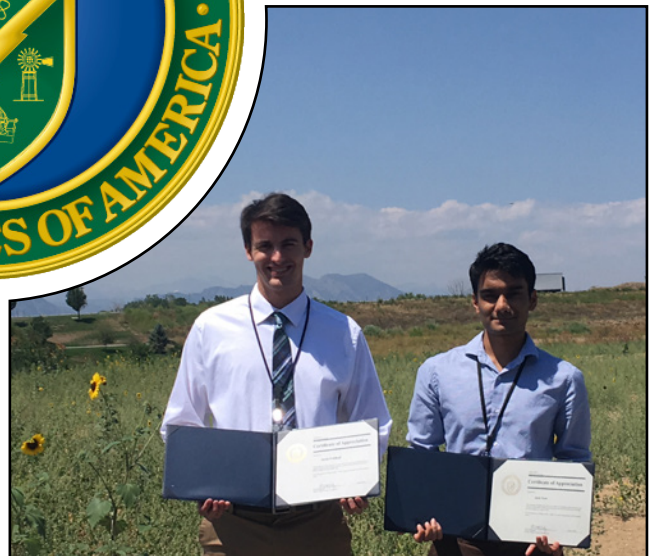
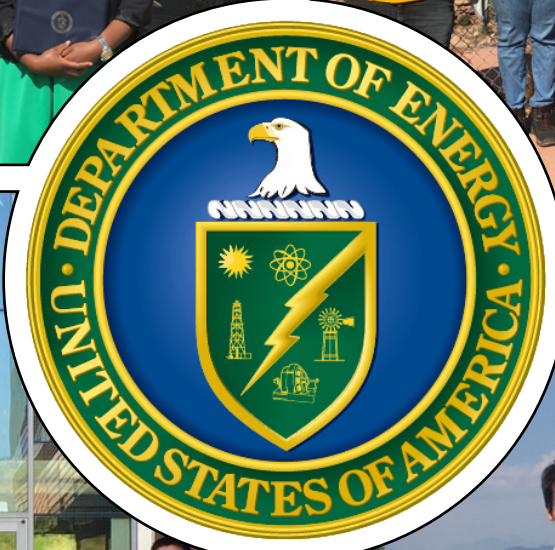
Clockwise from top left: 1. Event exhibitors, educational activities, and native plant vendors inspired visitors to help support pollinators at home. 2. Missourians for Monarchs released tagged butterflies with help from visiting children. 3. The Missouri Department of Conservation conducted tagging activities as part of Monarch Watch international population monitoring efforts. 4. Kids helped capture and tag monarchs to experience real citizen science at the event.



LM Summer Interns Gain Valuable Field Experience

This summer, five interns pursuing college degrees in STEM fields, such as environmental engineering and environmental science, gained valuable work experience with the U.S. Department of Energy (DOE) Office of Legacy Management (LM). Indigo Rockmore, Kaneshia Moffett,

and Filvert Kinlichee interned at LM's Grand Junction, Colorado, office. Jacob Kohlhoff and Jash Vora interned at LM's Westminster, Colorado, office. The students represented a variety of schools from across the country, including Diné College and Hampton University.



Clockwise from top left: (L-R) Filvert Kinlichee, Kaneshia Moffett, and Indigo Rockmore, interns at LM's Grand Junction, Colorado, office. Interns (L-R) Filvert Kinlichee, Indigo Rockmore, Jash Vora, Jacob Kohlhoff, and Kaneshia Moffett in the field. Westminster interns Jacob Kohlhoff (left) and Jash Vora (right). LM employees and interns visited the National Renewable Energy Laboratory (NREL) outside of Denver, Colorado. (L-R) Andy Keim (LM), Cassie Gauthier (LM), Jacob Kohlhoff (intern), James Bosch (NREL), Indigo Rockmore (intern), Kaneshia Moffett (intern), and Filvert Kinlichee (intern).

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LM Summer Interns Gain Valuable Field Experience

LM Program Analyst Padraic Benson kicked off the summer interns' experiences by sharing a presentation on LM's history. Prior to coming on board, many of the interns did not know about LM's responsibilities, so the information provided context for their upcoming tasks.

Each intern was paired with an LM federal employee and/or LM Support contractor who served as their project advisor(s) and mentor(s) throughout the summer. Just as LM's work varies across the organization and from site to site, so did the interns' projects.

Vora and Rockmore worked on projects related to LM Goal 4, to sustainably manage and optimize the use of land and assets. Vora, who worked with the Asset Management Team, explored potential sustainable reuse opportunities for LM-owned land, including placement of a cellular network infrastructure. Rockmore studied the effects of grazing on plant ecosystems at LM's Rifle, Colorado, Disposal/Processing Site.

Other projects revolved around LM Goal 1, to protect human health and the environment. Kohlhoff worked with the Defense-Related Uranium Mine (DRUM) Team to determine whether a correlation existed between radium-226 and gamma, uranium and vanadium, or uranium and radium-226—an important topic related to radiation exposure at the DRUM sites.

In Grand Junction, interns Moffett and Kinlichee worked on projects related to precipitation. Moffett learned about the rain gauge used at the Grand Junction site and studied the relationship between precipitation and the environment. Kinlichee studied the System Operation and Analysis at Remote Sites (SOARS) sensors that assist LM scientists in evaluating the progress of groundwater remediation at distant project sites.

On August 9, each of the interns had an opportunity to present their summer projects to LM senior management and the rest of the organization, during the weekly managers meeting.

When asked what this internship meant to him, Vora stated, "This internship exposed me to the great work LM undertakes and was a truly memorable and enriching experience."

Rockmore added that the internship allowed her to build "a meditative relationship with nature" and gave her time to explore her "passion for environmental justice on a management and administrative level."

Each summer LM offers internships that support various DOE STEM initiatives like the Mentorship for Environmental Scholars Program and the Environmental Internship Program offered by Urban Energy Garden, a nonprofit organization. ♦

Be Environmentally Conscious

LM is continually seeking opportunities to protect the environment and conserve natural resources. One simple step we can take toward improving environmental consciousness is to distribute the Program Update newsletter by email instead of sending a printed copy.

Please send your email address and your first and last names to LM-ProgramUpdate@lm.doe.gov so that we can update our database.

Thank you for your assistance.





LM Meets with Prominent Leaders to Address Uranium Contamination on the Navajo Nation

Arizona Congressman Tom O'Halleran hosted his second annual Uranium Town Hall meeting on May 30, 2018, at the Cameron Chapter House in Cameron, Arizona. The public meeting gave federal and tribal entities an opportunity to provide a brief update on their work on uranium-related issues within the Navajo Nation.

Also in attendance were Navajo Nation President Russell Begaye, Navajo Nation Council Delegate Walter Phelps

The LM site manager for the Shiprock, New Mexico, and Tuba City, Arizona, disposal sites, Mark Kautsky, represented DOE at the meeting. Kautsky addressed LM's work on the two former uranium mill sites and the office's goal of protecting human health and the environment.

He explained that restricting the use of groundwater and grazing is necessary near LM's disposal cells so that communities are not exposed to contamination.

"I recognize that grazing is an important aspect of Navajo culture," said Kautsky. "We compensate folks who have historical grazing privileges in those areas."

He added that LM accomplishes much of its mission, in part, through a cooperative agreement with the Navajo Nation Uranium Mill Tailings Remedial Action program.



Navajo Nation President Russell Begaye speaks to the Uranium Town Hall meeting crowd on May 30.

(Cameron, Coalmine Canyon, Birdsprings, Leupp, and Tolani Lake), and Arizona Senator Jamescita Peshlakai. Officials from the Cameron Chapter House, U.S. Environmental Protection Agency (EPA), Navajo EPA, Navajo Abandoned Mine Lands, U.S. Department of Energy (DOE) Office of Legacy Management (LM), and Navajo Department of Health were also present. Representatives from the Western Navajo Agency, which provides services to residents in the western region of the Navajo Nation, also attended.

Navajo Nation President Russell Begaye discussed the fact that there currently are more than 567 abandoned and unmitigated uranium mines on the Navajo Nation and that uranium mining companies are still seeking mining permits.

When addressing the transportation of uranium across Navajo lands, regardless if these routes run along federal and state highways, he stated, "Our sovereignty needs to be honored. If Navajo law says don't transport uranium through Navajo lands that should be the final word."



Arizona Congressman Tom O'Halleran addresses attendees at the second annual Uranium Town Hall meeting held May 30.

A week after the meeting, on June 7, the U.S. House of Representatives unanimously approved an amendment, introduced by Congressman O'Halleran, allocating \$1 million from DOE to help clean up abandoned uranium mines on the Navajo Nation. ❖



Stakeholders Get a Firsthand Look at Bluewater, New Mexico, Disposal Site During Public Tour

On October 25, 2018, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) offered a public tour of the Bluewater, New Mexico, Disposal Site. Bluewater was a uranium ore processing site addressed by Title II of the Uranium Mill Tailings Radiation Control Act (UMTRCA). The 3,300-acre site lies within Navajo ancestral lands in Cibola County, in north-central New Mexico, approximately 85 miles west of Albuquerque.

Uranium ore processing at the Bluewater site produced radioactive tailings, which contaminated the groundwater in the underlying aquifers. The tour visited the main tailings disposal cell as well as the carbonate tailings disposal cell.

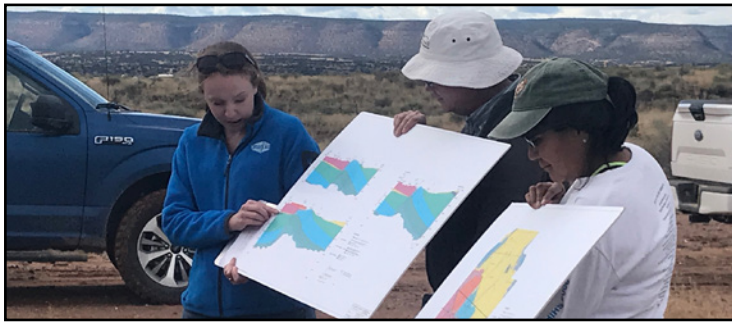
During the tour, LM had the opportunity to engage with and listen to stakeholders, which is fundamental to LM succeeding

in its mission. Understanding stakeholder concerns allows LM to be better informed and perform long-term stewardship duties more effectively. The tour included local community members as well as staff from New Mexico Senator Tom Udall's office and the New Mexico Environment Department.

One of the tour participants, local Navajo resident Sunny Dooley, described the Bluewater cell as an example of healing the destruction associated with past uranium activity. According to Ms. Dooley:

“The companies who mined and processed the uranium left behind a tremendous legacy of radiation exposure, and land and water contamination. Today, the remnants of this situation are still apparent in the many communities who are living with this tragic history. After visiting the site, I am seeing how the site has flourished with a variety of wildlife, shrubs, grasses, and trees. It appears to be returning to an ‘almost natural state.’ It will take a lot of focused effort to reclaim the integrity of the entire ecosystem. However, this tour is a good first step.”

LM is grateful to those who were able to attend the tour. Their participation made the tour a success. As a result, LM intends to make it an annual event so community members can get a firsthand look at the Bluewater site. ❖



Alison Kuhlman and Dick Johnson (LM Support contractors) and Bernadette Tsosie (LM) explain the hydrogeology of the Bluewater site.



Tour participants explore the main tailings disposal cell, which covers about 354 acres at the Bluewater site.



LM Engages Students at STEM-Sation Event on Navajo Nation

Step into the mind of a civil engineer proposing drainage control features within a watershed ...

Or a scientist testing for radiation levels in a community ...

Or envision yourself as a hydrologist taking water samples from a nearby river ...

Students were able to do just that during the STEM-sation event, held at Chinle High School, in Chinle, Arizona, on November 9. Chinle is the largest high school on the Navajo Nation. LM has participated in other STEM-sation events this year at Shiprock High School, Kirtland High School, and Greyhills Academy.

For the last STEM-sation event of the year, U.S. Department of Energy Office of Legacy Management (LM) staff and LM Support (LMS) contractors provided a variety of hands-on activities to promote STEM fields to students.

This event, sponsored by Navajo Transitional Energy Company (NTEC) and Navajo Abandoned Mine Lands, drew in more than 1,000 high school students and included over 20 participating vendors.

LM Site Manager William Frazier demonstrated a hands-on stormwater management exercise for the students and faculty. First, Frazier taught the students how stormwater systems are designed. Then he explained the evaluation of watersheds, including quantifying rainfall and determining runoff quantities, as well as the subsequent design and implementation of stormwater structures and features.

He allowed the students to take on the role of a civil engineer for a few moments, and place drainage control features within a proposed watershed.

"There were many interested students and faculty that talked about real-time problems at their home site locations," Frazier said. "We discussed the problems in depth, and some proposed solutions that they could consider implementing. I thoroughly

enjoyed the enthusiasm and the vision of the future these young people had, and I was happy to encourage them to continue to do their best in life."

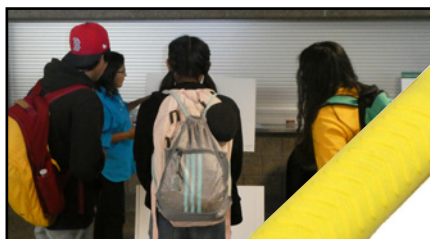
LM Site Manager Angelita Denny demonstrated the use of a radiation detector (Geiger counter) instrument that is commonly used for performing radiation and contamination surveys on DOE LM project sites around the country.

LM staff and LMS contractors also presented a groundwater flow demonstration, which illustrated to students how groundwater is stored and moves through the different layers of soil, sand, and rocks.

The students were provided an operating radiation detector instrument and a hands-on display that had a mix of low-level, naturally occurring radioactive material (NORM) items and other items that did not contain NORM. The hands-on display included a home smoke detector, a container of Brazil nuts, a banana, a rock that contained NORM, a Fiestaware flower vase, an old spark plug, a container of NoSalt (a salt-substitute), a small bag of cat litter, and a rubber ducky. These items were specifically selected for the display in order to show that they are a generally a part of our everyday lives and that they contain small concentrations of radioactive material.

"A lot of students were interested in going to college and we encouraged them," said Denny. "I told them there would be times they may fail, and go through tough times. I explained that is part of the process in trying to reach their goals."

"We want to thank all the vendors, students, and Chinle High School administrators and teachers for making STEM-sation a success," said Nathan Tohtsoni, the NTEC education coordinator. "The purpose of the event is to promote STEM fields to our Navajo students to show them opportunities they have in these fields. They don't have to go to the cities when there are quality STEM jobs here on the Navajo Nation." ❖



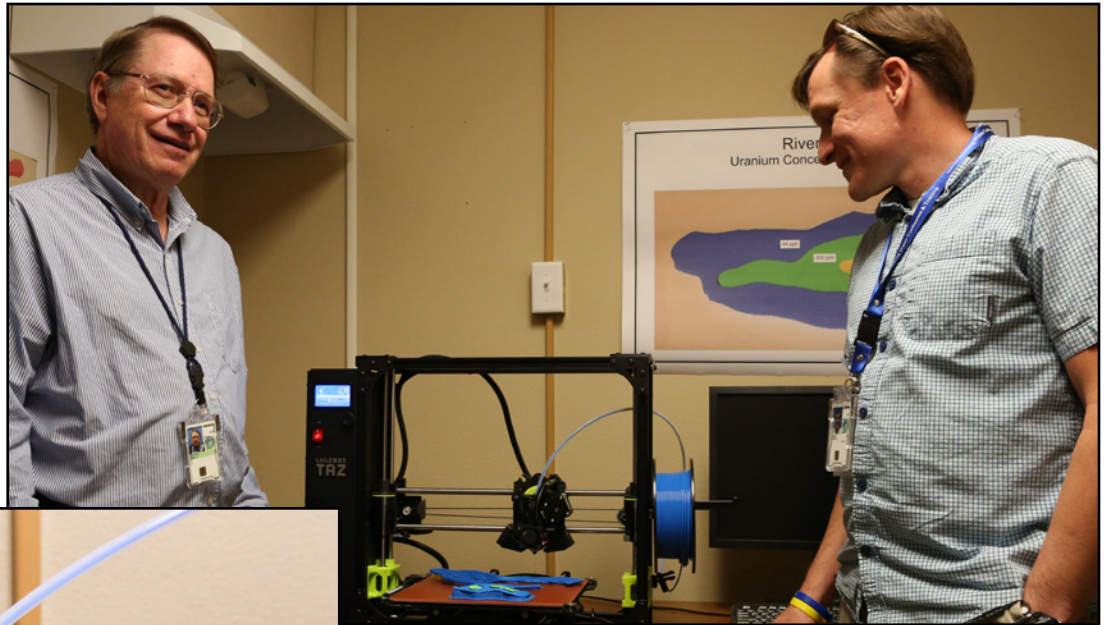
LM and LMS staff provide students with hands-on activities at the Chinle High School STEM-sation event.



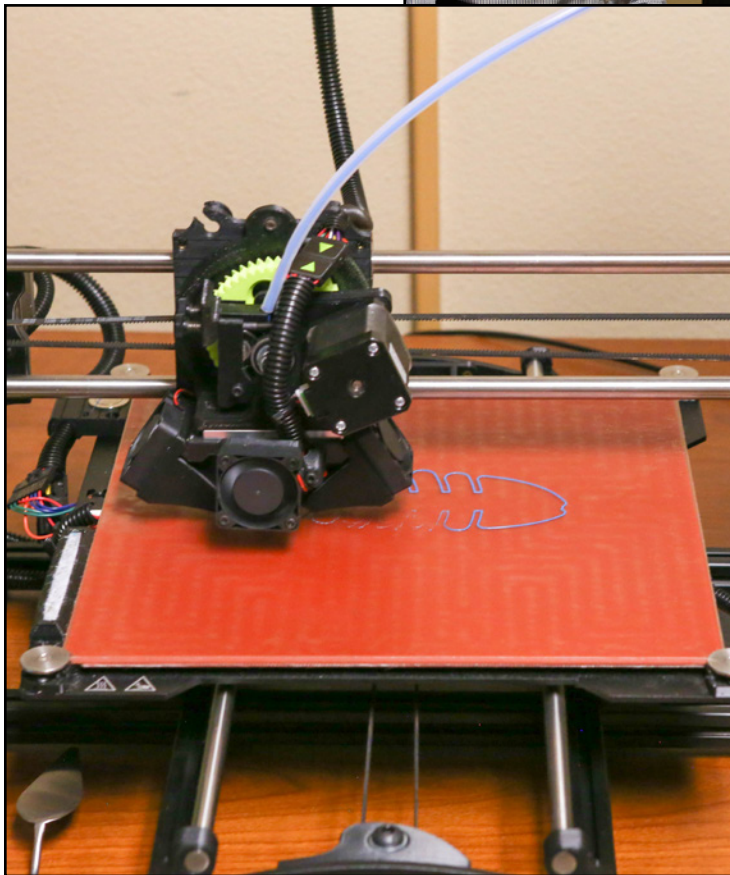
3D Printer Enhances Communication with Stakeholders

The U.S. Department of Energy Office of Legacy Management (LM) has a new tool to enhance stakeholder communication.

The Environmental, Spatial, and Data Management Department in Grand Junction, Colorado, has been using a Luzbot TAZ 6 three-dimensional (3D) printer to create 3D models to help illustrate technical information for presentations, open houses, and STEM events.



Jim Whitney, LMS CAD lead, and Joshua Linard, LM technical data manager, stand next to the 3D printer in Grand Junction. The printer is used to create models to help illustrate technical information for presentations.



Models are created with specialized programs, or “slicers,” that cut CAD drawings into layers. The high-end printer utilizes fused deposition modeling technology to build objects layer by layer on a one-cubic-foot printing area from heated thermoplastic filament or other materials.

This process can take 14 hours or more depending on the complexity and size of the design.

Presenters are encouraged to use the 3D models in conjunction with CAD animations to give their audience both a visual and tactile representation.

Animations and 3D models “go together very well,” said Jim Whitney, LM Support (LMS) contractor lead. Whitney used the printer to create a model of a contaminated groundwater plume at the Tuba City site. The visual tool depicts the dynamics of contaminated groundwater beneath the former uranium mill.

As technology matures, Kautsky anticipates using more combinations of computer-based 3D animations and physical models at public outreach events.

“3D printing is an emerging technology and we’re excited to be developing our in-house capabilities,” Kautsky said. ❖

“Our Computer Aided Graphics (CAD) group is developing many visual products to improve our ability to communicate with stakeholders and tribal partners,” said Mark Kautsky, LM site manager for the Tuba City, Arizona, and Shiprock, New Mexico, disposal sites. “We plan to use 3D-printing models at outreach events on the Navajo Nation.”



Visitors Get an Early Look at Atomic Legacy Cabin



Above: LM staff and visitors, including family members of Army Lieutenant Philip C. Leahy, visit the construction site of the Atomic Legacy Cabin. (L-R) Peter O'Konski, Mark Green, Nick Green, Cathy Green, Sharon Bachochin, Bob Bachochin, Ben Green, Alexis Hitzeroth, and Bud Sokolovich. Right: Under direction from the federal government, Leahy established a western Colorado outpost for the Manhattan Project in 1943.

Braving the heavy rain and subsequent mud on August 21, two small groups got a sneak peek at the renovations taking place inside the historic log cabin located at the Grand Junction, Colorado, office site as it undergoes transformation into an interpretive center.

The log cabin was located on the 55-acre property near the Gunnison River when it was purchased by the U.S. Government via Army Lieutenant Philip C. Leahy under secret orders in 1943. Leahy was commanded to establish a domestic uranium procurement program for the U.S. Army Corps of Engineers (USACE) Manhattan Engineer District (MED).

Since then, the historic cabin has been used as the Atomic Energy Commission (AEC) office, a human resources office, a credit union, and a gym for employees. In 2016, it was listed on the National Register of Historic Places. After renovation is complete, the Atomic Legacy Cabin will be open to the public as a self-guided interpretive center.

Among the guests were some of Leahy's family members including his daughter, Sharon Bachochin; granddaughter, Cathy Green and her husband, Mark Green; and great-grandsons, Nick and Ben Green.

Despite the construction dust and unfinished walls, Leahy's family said they were already impressed with the rehabilitation work being done to the cabin.

"We are just thrilled that this is happening, because we have always thought of him as a legend and now he is," said Cathy Green.

An adjacent park, located in the middle of the campus, was dedicated to Leahy's memory in 2015.

Necessary enhancements have been made to ensure the structural integrity of the cabin, as well as new wiring, plumbing, windows, and roofing.

Measures have been taken to preserve several of the cabin's features. The brick fireplace has been cleaned and restored. The original shiplap will be repurposed as a ceiling element.

"We are maintaining the integrity, look, and feel of this place," said Asset Management Team Leader Bud Sokolovich. "We're hoping that momentum grows, and people come to learn about what we do, what we've done in the past, and what we're hoping to do in the future."

Continued on page 15

Visitors Get an Early Look at Atomic Legacy Cabin

LMS Public Affairs Manager Laurena Davis and LM Program Analyst Padraic Benson gave the groups a tour of the planned exhibit areas of the learning center.

Exhibits will inform the public about Grand Junction's role in the Manhattan Project and the Cold War, as well as educate about nuclear energy, the stewardship of post-closure properties, and the importance of beneficial reuse.

The museum will include a reproduction of the AEC office as it would have been in the early days of AEC. Many of Leahy's personal items have been donated by his family for use in this display. Leahy's generation was "the greatest generation," said LM Deputy Director Peter O'Konski. "We hope this place will help preserve some of those memories." ♦



Above right: The cabin, as it appeared in 1947.

Below: Conceptual designs of the renovated Atomic Legacy Cabin offer a preview of the future interpretive center.





Jonathon Damiano Receives the Philip C. Leahy Award

Jonathon Damiano credits his coworkers for his success. It's a key reason he was chosen to receive the top award given by the U.S. Department of Energy Office of Legacy Management (LM).

The Philip C. Leahy Award is an annual award that serves as LM's Employee of the Year recognition. The award is given to those who demonstrate the qualities of a team player, as described by John C. Maxwell in his book, "The 17 Essential Qualities of a Team Player." The book lists qualities such as: dependable, enthusiastic, prepared, self-improving, selfless, and tenacious. Nominees are expected to possess these qualities and notably take extra steps to ensure LM's organizational mission and goals are achieved.

Damiano, LM's first Quality Assurance manager, was surprised by the award during the All-Hands Dinner at the 2018 Long-Term Stewardship Conference, which took place in Grand Junction, Colorado, in August. He admits he "was kind of shocked" to have received it.

"This is really a reflection on the people I work with who have helped and mentored me," he said.

Damiano also has demonstrated qualities of leadership that have helped him develop a comprehensive Quality Assurance program for LM, said David Shafer, the director of the LM Office of Site Operations.

"He's a go-to person in LM for helping teams identify problems in work processes and improving performance and quality," Shafer said. "For example, Jon deserves a lot of credit for helping the Defense-Related Uranium Mine Team exceed the number of mines at which they completed verification and validation by more than 200 in fiscal year 2018."

Damiano said his job can often be challenging. It involves identifying quality assurance issues and problems, then taking corrective action with oversight. In some cases, it may be pausing or stopping work, adding controls, and proactive audits.

"It's often something that no one likes, but they do get the benefit in the long run," he explained.

He said he tries to prioritize issues while being mindful of LM's long-term organizational improvements. He strives to make this often difficult process as easy as possible on everyone.

"I try to take that extra step to help, rather than just issuing things and expecting them to work," he said.

Earning the Leahy Award is the best kind of feedback to receive, Damiano said. "It's good to hear that the things I'm trying to do for the organization are appreciated." ❖



LM Director Carmelo Melendez, right, presents the Philip C. Leahy Award to Jonathon Damiano.



DOE Senior Leaders Tour Deactivated Former Nuclear Plant

On December 14, U.S. Army Corps of Engineers (USACE) staff led U.S. Department of Energy (DOE) and Office of Administration senior officials on a tour of the Stationary, Medium Power Reactor Prototype Number 1 (SM-1) deactivated former nuclear power plant at Fort Belvoir, an Army installation in Fairfax County, Virginia. Tour attendees from DOE included: Under Secretary Mark Menezes, Office of Legacy Management (LM) Director Carmelo Melendez, LM Deputy Director Peter O'Konski, Principal Deputy Assistant Secretary for Nuclear Energy Ed McGinnis, and Operational Management Office of Administration Director David Brown. USACE Staff was led by Karen Baker, USACEHQ Chief of Environmental Division.

There has recently been a renewed interest in small modular reactors (SMRs) and very small modular reactors for both commercial and military applications. DOE is supporting the development and licensure of advanced SMR designs, which is why DOE officials were interested in viewing the prototype Army Package Power Reactor.

The SM-1 was the first reactor built under the Army Nuclear Power Program (ANPP). The ANPP was a joint program between the U.S. Department of Defense (DoD) and the Atomic Energy Commission that fielded six DoD reactors and two at the National Reactor Testing Station in Idaho. The SM-1, which functioned from 1957 to 1973, was the first nuclear power plant in the United States to provide electrical power to a commercial electric grid. Over 800 reactor operations personnel from the Army and other military branches were trained on the reactor.

Partial decommissioning of the SM-1 was completed in 1974 and consisted of the removal of the nuclear fuel, minor decontamination, shipment of necessary radioactive waste, sealing of the pressure vessel, and installing appropriate warning signs and monitoring devices. The USACE headquarters environmental division chief holds the Army Reactor permit for the SM-1, and decommissioning planning for the SM-1 is currently underway. In fiscal year 2018, DOE's Office of Disposal Operations assisted the USACE with the MH-1A STURGIS barge decommissioning project by providing radioactive waste disposal support for the higher activity wastes.

Final decommissioning on the SM-1 is expected to be implemented over the next several years, and it is likely DOE will again support the USACE with this effort.

More information on the SM-1's history and the ongoing decommissioning planning effort can be found online at <https://www.nab.usace.army.mil/Missions/Environmental/SM-1/> ❖



DOE and USACE senior leaders tour SM-1 Nuclear Reactor at Fort Belvoir

OVER THE PAST 15 YEARS,

the long-term surveillance and maintenance responsibilities of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) have expanded — from 33 sites in 2003 to 92 sites today. It is projected that LM will be responsible for 118 sites by 2025. LM has also significantly expanded its outreach and educational efforts with stakeholders and communities in proximity to its sites.

This timeline represents a brief account of LM's activities from 2003 to 2018 in protecting the environment, managing information, ensuring continued retirement benefits for former contractor workers, managing legacy land for beneficial reuse, and engaging communities.

The events included herein represent some of LM's significant responsibilities and achievements, and describe some of the major milestones during its history. This timeline serves as a starting point for describing LM's important role in continuing to meet remaining legacy responsibilities at nearly 100 sites across the country.

Improving our scientific understanding and application of cutting-edge technology improves our site management. The best of LM's work is yet to come as more is learned about these sites, and work with experts in the industry continues, so that LM is able to provide the highest quality long-term surveillance of these legacy sites.



2018

- Hosted 400 attendees at
- Celebrated the grand opening of the Mound Development Center

2017

- Celebrated opening of the 13th
- Hosted approximately 375 visitors

2016

- Received the Presidential Award for
- Accepted responsibility for co-creating a partnership park with the U.S.

2015

- Became the first DOE office to receive
- Hosted a park dedication and opening ceremony for office founder Philip Leahy.

2014

- Submitted the Defense-Related Uranium Remediation Plan for abandoned uranium mines as well as
- Established second Five-Year Plan to address

2013

- Facilitated partnership with U.S. Fish and Wildlife Service for burying beetles at the Fernald
- Recorded over 200,000 visitors to the V

2012

- Digitized more than 400,000 X-ray records
- Released the Geospatial Environmental Management System for sites managed by LM.

2011

- Consolidated DOE Office of Civilian Radioactive Waste Management
- Issued LM's 2011–2015 Human Capital Management Plan

2010

- Finalized the Gasbuggy, New Mexico, Site Interim Remedial Action Plan
- Opened the LM Business Center in Morgantown

2009

- Removed over 2,500 cubic yards of contaminated soil
- Recycled the sanitary sewer treatment plant at the

2008

- Established the LM Consolidated Data Center in Morgantown
- Completed the award-winning Fernald Preserve Visitor Center

2007

- Placed 1,527 acres into reuse at the Shirley Basin South, in the transfer of nearly 4,000 acres of the Rocky Flats
- Supported creation of first Five-Year Plan for addressing

2006

- Implemented System Operation and Analysis at Remote Site for groundwater monitoring and record results electronically.
- Removed 18,000 pounds of contaminants at the Pinellas

2005

- Donated laboratory equipment and supplies worth more than
- Assumed responsibility for Environmental Justice activities at

2004

- Supported the state of Colorado and city of Durango by trans
- Hosted the 2004 Stakeholders Conference on Worker Transition

2003

- The U.S. Department of Energy created the Office of Legacy Management
- Incorporated the Office of Worker and Community Transition and

the Long-Term Stewardship Conference in Grand Junction, Colorado.

ning of the Mound Cold War Discovery Center, a collaborative effort with the Mound Science and Energy Museum,
poration, and Dayton History.

00-acre Las Colonias Park by the city of Grand Junction, Colorado, on a former uranium mill site.

visitors at the Total Solar Eclipse of the Cell event at the Weldon Spring, Missouri, Site.

d for Sustainability at the Rocky Flats, Colorado, Site.

rdination of DOE's role in the Manhattan Project National Historical Park,
S. National Park Service.

ake geospatial data available on <https://www.geoplatform.gov>.

en house at the Grand Junction, Colorado, office in honor of

mium Mines Report to Congress, describing the location and status of
as the potential hazards the mines present to human health and the environment.
address contamination in the Navajo Nation.

and Wildlife Service and the Cincinnati Zoo and Botanical Garden to recover the
ld Preserve, Ohio, Site under authority of the Endangered Species Act of 1973.

Weldon Spring Interpretative Center since it opened in 2002.

ds to ensure long-term preservation.

apping System (GEMS) to the public to provide dynamic mapping and environmental monitoring data display

ective Waste Management data centers into existing LM locations.

agement Plan.

gency agreement with energy developers and the Jicarilla Apache Nation regarding collaboration and commitment to manage protectiveness.

wn, West Virginia, a National Archives and Records Administration-certified facility with 150,000 cubic feet of storage capacity.

d soil at the Pinellas County, Florida, Site.

e Mound, Ohio, Site.

organtown, West Virginia.

tors Center.

Wyoming, Disposal Site for livestock grazing and assisted the Office of Environmental Management
, Colorado, Site to the U.S. Department of the Interior for use as a national wildlife refuge.

y the most imminent risks on the Navajo Nation.

tes (SOARS) telemetry data and installed data loggers at several remote sites to conduct

County, Florida, Site using an electrothermal dynamic stripping process.

han \$690,000 to colleges and universities throughout the country.

nd the Massie Chairs of Excellence Program.

ffering the former Durango, Colorado, Disposal Site into a park for the community.

n and Legacy Benefits in Las Vegas, Nevada.

management, with 81 federal staff, to provide long-term surveillance and maintenance at 33 sites.

d portions of the Office of Environmental Management into LM.

Elk herd at the Rocky Flats, Colorado, Site



American burying beetle at the Fernald Preserve, Ohio, Site

Environmental technician doing well sampling at the Weldon Spring, Missouri, Site





Prairie Establishment at the Burrell, Pennsylvania, Disposal Site



Test plot for prairie establishment at the Burrell site.

The U.S. Department of Energy Office of Legacy Management (LM) is working to establish tallgrass prairie on a portion of the Burrell, Pennsylvania, Disposal Site. This site was identified as a candidate for conservation reuse activities as part of LM-wide strategic planning initiatives. Conservation activities, such as prairie establishment, are recognized as a beneficial reuse of LM sites as part of the LM Environmental Management System. Use of native grasses and wildflowers is also considered a best management practice for promoting pollinator health.

A 2-acre section of the Burrell site was identified in 2017 as a test plot for prairie establishment. This area consisted of cool-season meadow grasses, with low diversity of native wildflowers. Existing vegetation was eliminated using herbicide during the 2018 growing season. Dead grasses and weeds were then mowed down in order to prevent shading of newly planted prairie grasses and forbs. Seed was hand broadcasted

in October. The seeding area was divided into quarter-acre plots to ensure the best rate of coverage across the entire prairie establishment project. A Pennsylvania native pollinator-friendly mix was selected for the seeding effort. Broadcast seeding in the fall provides some benefits for prairie establishment. Seeds naturally work their way into the soil via precipitation and freeze/thaw cycles. Germination is improved after seeds overwinter, and the dead former vegetation that remains from herbicide application helps protect the seed from birds.

The prairie plot will be evaluated through 2019 and mowed as needed to prevent the establishment of weeds. Once the native grasses and wildflowers are established, the Burrell site will contribute to meeting LM goals of beneficial reuse and pollinator health. If the test plot proves successful, there is room at the Burrell site to expand the size of the prairie in the future. ❖

GOAL 4



Westminster Office Recognized in EPA ENERGY STAR Program

In July 2018, U.S. Department of Energy (DOE) Office of Legacy Management (LM) federal and LM Support (LMS) contractor staff in Westminster, Colorado, relocated from offices they had occupied since 2006 to a new, energy-efficient building. Approximately 85 LM and LMS staff members now occupy the 19,124-square-foot leased office space.

Sustainability considerations are important to LM and are applied to the maximum extent practicable for leased facilities. For the Westminster project, including “green language” in the lease, and early involvement with the landlord in the build-out phase, ensured the building was designed to meet higher energy-efficiency standards, and that it would be as cost effective as possible. This supports LM's commitment to its various goals and targets, including Goal 4, to sustainably manage and optimize the use of land and assets.

Leased tenant spaces account for approximately 50 percent of energy use of all commercial buildings. While building owners typically have control over the multi-tenant building systems and operations, more tenants are playing a significant role in actively working with landlords toward achieving energy reduction.

As part of the Energy Efficiency Improvement Act of 2015, the U.S. Environmental Protection Agency (EPA) piloted the ENERGY STAR Charter Tenant Space program in September 2017 to work toward improving energy efficiency in tenant spaces and overcoming barriers that typically limit tenants to pursue efficiency initiatives. The Westminster office, chosen as a participant in the program, has been working toward earning recognition as an ENERGY STAR Tenant Space.

Over the course of 10 months, participants committed to taking five key actions that contribute to energy efficiency and cost

reduction: estimating energy use, metering energy use, installing efficient lighting, purchasing energy-efficient equipment, and benchmarking utility usage in the ENERGY STAR Portfolio Manager, which provides data that can be shared with the landlord, if requested.

LM created a team to collect energy information about the building using an online tool developed by the EPA, which estimates energy use and assesses the efficiency of lighting and equipment. Information gathered was used to complete an equipment inventory form, an energy estimation, and lighting data questionnaire. This information was reviewed by an LMS professional engineer, who deemed it complete and accurate, and submitted to the ENERGY STAR program in March 2018.

Sustainable features include using high-efficiency lighting and daylighting, using ENERGY STAR-certified products and equipment, metering all required areas, and efficiently using space. Data gathered through a well-designed metering plan can provide evidence of program effectiveness. They can also aid in developing energy-management strategies and energy-efficiency projects, and then be used to measure their effectiveness, when implemented.

On June 12, 2018, the Westminster office space was one of 50 participants to receive recognition for meeting the energy design criteria set by EPA, and the only federal participant to receive the recognition. ❖



Left to right: An open office concept provides flexibility and space efficiency in the new work areas. Energy-efficient LED light fixtures were installed on the exterior of the building. Several LM/LMS staff were involved throughout the lease and construction of the new building, as well as the ENERGY STAR Charter Tenant Space program; L-R: Bud Sokolovich, Ann Wei, David McNeil, and Paul Stocking.



Environmental Justice Activities



Presentation at the TREAT Workshop by Rod Pope, EPA Region 4.

Teaching Radiation, Energy and Technology (TREAT) Workshop – Aiken, South Carolina

Representatives from the U.S. Department of Energy Environmental Justice Program participated in the Teaching Radiation, Energy and Technology (TREAT) workshop sponsored by the Savannah River Site (SRS) and Savannah State University in Aiken, South Carolina, on July 11-13, 2018.

SRS Manager Michael Budney participated in the workshop along with Aiken Mayor Rick Osbon, representatives from the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, the South Carolina Department of Health and Environmental Control, as well as community members, teachers, and students.

Presenting on waste management and environmental radiation, the goal of the TREAT workshop was to educate kindergarten through 12th grade math and science teachers, as well as local community leaders who reside near the SRS facility. Over the past 23 years, more than 400 K-12 science

and math teachers have participated in TREAT workshops in Savannah, Georgia, and Aiken, South Carolina.

Throughout the workshops, teachers actively engaged in hands-on laboratory exercises on radiation monitoring devices. Other topics included environmental monitoring, emergency response management, and regional and global nuclear technology. Teachers were encouraged to incorporate this knowledge into their classroom curriculum during the academic year. ❖



Hands-on laboratory exercise on radiation monitoring devices.

“It really impacted me when Reverend Boseman said, ‘If you are not at the table, then you are on the menu.’- because it made me realize that in order to make a difference, I have to take action and give myself a chance for my voice to be heard.”
– Kia Smith, Dillard University

Continued on page 23

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Environmental Justice Activities

Community Leaders Institute

On July 27-28, 2018, the Medical University of South Carolina, the U.S. Department of Energy (DOE), Allen University, Ebenezer A.M.E. Church, and the Church House of Ministries World Wide held a Community Leaders Institute (CLI) in Ladson, South Carolina.

Attendees included U.S. Representative James E. Clyburn; community leaders; representatives from federal, state, and local governments; community members; and students.

The purpose of this CLI was to reinforce the idea that progress requires informed and active leaders and to emphasize the

unique relationship between environmental protection, human health, environmental justice, and economic development as an essential part of community development. A critical factor in building and sustaining healthy communities is a well-informed community in which members assume informed and active leadership roles. The CLI helps those leaders know how to access and obtain the information necessary to make sound decisions and communicate with their citizenry.

Sessions covered the role of federal, state, and local government; youth issues and challenges; economic development, housing, transportation, and community development; and health disparities and health issues. ❖



Attendees at the 2018 Community Leaders Institute.

Continued on page 24

Continued from page 23

Environmental Justice Activities

Environmental Justice Braintrust

On September 14, 2018, the Congressional Black Caucus held its 48th Annual Legislative Conference in Washington, D.C. U.S. Representative James E. Clyburn served as chair of the Congressional Black Caucus Environmental Justice (EJ) Braintrust during the conference. As the U.S. Department of Energy EJ Program Manager, DOE is a sponsor of the Braintrust and a member of the planning committee.

This year's Braintrust panel brought together experts to discuss the poverty and wealth gap in the United States, including

a focus on the unique relationship between environmental protection, EJ, economic development, and human health. Panelists included Dr. Glenda Baskin Glover, president of Tennessee State University; Larry D. Bailey, president of LDB Consulting; and Rev. Marvin Owens, senior director of the National Association for the Advancement of Colored People.

Panelists pointed out that environmental conditions and health disparities are linked by the common thread of poverty — some of the communities plagued by persistent poverty suffer the worst environmental and health outcomes. ❖



Honorable James E. Clyburn chairs the Congressional Black Caucus Environmental Justice Braintrust during the group's September legislative conference.

Continued on page 25

Environmental Justice Activities



Tennessee's Department of Environment and Conservation will be exploring TN College/Underserved Community Partnership (TN CUPP) projects to partner with Tennessee State University. (L- R): Dr. Lonnie Sharp, Tennessee State University; Brook Powell, TDEC Office of Policy and Sustainable Practices; Kendra Abkowitz, TDEC Assistant Commissioner; and Chris Pianta, TDEC Office of Policy and Sustainable Practices.

College for Underserved Community Partnership Program

In December 2017, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) signed a Memorandum of Understanding to foster collaboration in addressing environmental justice (EJ) and economic development issues in accordance with the National Environmental Policy Act (42 U.S.C.4332) and the mandate of Presidential Executive Order 12898.

An important component of collaboration between the two agencies involves programs such as the College for Underserved Community Partnership Program (CUPP), which was originally developed by the EPA. The aim of CUPP is to build community capacity for addressing negative environmental impacts through developing sustainable economic opportunities, and promoting the utilization of EPA and DOE assets to support the mission of both agencies.

CUPP enlists college students as interns under the supervision of experienced faculty to assist underserved communities with vital technical support. With the support of DOE and EPA, these communities and educational institutions gain the knowledge

and skills for significantly improving the economic future and health of participating communities; using energy efficiently and effectively; and learning about longstanding issues of abandoned and polluted industrial sites, food scarcity, and health concerns.

The Tennessee Higher Education Institutions (TN HEI) and Tennessee Department of Environment and Conservation have partnered with EPA and CUPP to create the Tennessee College/Underserved Community Partnership Program (TN CUPP) program. This program creates partnerships between underserved communities and TN HEI. Through these partnerships, TN HEI provides a variety of low- or no-cost technical support and resources to address environmental, economic, and health issues that impact the quality of life in nearby underserved communities. Professors and students benefit from these projects by gaining hands-on experience in their areas of study. Students earn college credit and valuable professional experience.

Tennessee became the only state with a state-level version of the EPA CUPP program when Tennessee Tech University and the town of Gainesboro launched the first TN CUPP project. ❖



USACE to Design and Renovate New LM Office Building in Grand Junction, Colorado

The U.S. Department of Energy Office of Legacy Management (LM) in Grand Junction, Colorado, has executed an interagency agreement with the U.S. Army Corps of Engineers (USACE) for the design and renovation of a newly acquired office building.

On April 7, 2018, LM acquired an 18,900-square-foot building (referred to as "Building 7") through a no-cost, federal-to-federal transfer with the U.S. Army Reserve. Building 7 appraised at \$1.4 million.

The interagency agreement for the 7.88-acre site will include a master plan and feasibility study that will require close coordination with local stakeholders and the adjacent landowners, including the Riverview Technology Corporation.

USACE will provide engineering and construction services utilizing existing contracts with nationally known providers.

According to Bud Sokolovich, LM Asset Management Team lead: "LM is excited to move this very important project forward and hopes to have the first phase of the project completed by the end of 2019."

This additional space fills a pressing need. Presently, 270 LM and LM Support (LMS) staff work at the Grand Junction office, with more hires expected. Operations include long-term surveillance and maintenance of legacy sites, and the Defense-Related Uranium Mines program. This workspace is designed to provide the combined LM and LMS team suitable space now and in the future. ♦



New property (highlighted in yellow) transferred to LM from the U.S. Army Reserve at the Grand Junction, Colorado, office.

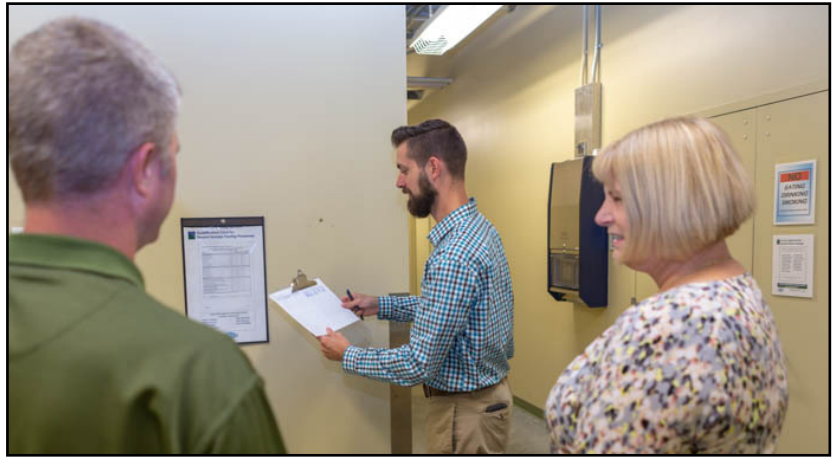
GOAL 2



LM Business Center Recertified as a NARA-Compliant Storage Facility

The National Archives and Records Administration (NARA) conducted an inspection of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Business Center (LMBC) Records Storage Facility in Morgantown, West Virginia, on July 25, 2018. This inspection is conducted every 10 years to ensure the facility remains compliant with the strict standards outlined in 36 *Code of Federal Regulations* Part 1234, "Facility Standards for Records Storage Facilities."

In preparation for the inspection, LM staff staged two mock inspections and consolidated the volumes of data necessary to document the LMBC's compliance with all



Top: Safety documentation is reviewed and signed by all tour participants before entering the secure LMBC Records Storage Facility.

Bottom: NARA representatives and LM federal and contractor staff discuss logistics involved in complying with safety protocols at the LMBC.

facility, fire safety, and environmental control requirements. NARA inspection staff was impressed with the documentation presented and noted it was among the best they had seen. During the physical inspection of the facility, NARA representatives praised LM for the facility's organization, procedures, and cleanliness and remarked that LM deserved a "gold star" for its facility.

On August 10, DOE Departmental Records Officer Troy Manigault received official notification from NARA providing for continued

approval for operation of the LMBC as an official records center and noted there were "no reportable findings."

"The professionalism the storage facility support staff continues to exhibit ensured the inspection went off without a hitch," LM Program Analyst Michael Garrett said. "The staff is to be congratulated for their dedication to duty and responsibilities." ❖



LM Director Speaks at Fall Tribal and Intergovernmental Meetings

Carmelo Melendez, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) director, participated in the concurrent 2018 State and Tribal Government Working Group (STGWG) and Intergovernmental Meetings in New Orleans, Louisiana, on November 13-16. The meetings provide opportunities for increased communication, coordination, and consultation among DOE program offices, states, tribes, and local communities affected by the ongoing cleanup of the nuclear weapons complex.

On November 13, Melendez and Principal Deputy Assistant Secretary for the Office of Environmental Management Mark Gilbertson joined tribal leaders at an STGWG roundtable discussion on priority recommendations for long-term stewardship at parcels of sites with active missions. Specific topics discussed included site-specific cleanup recommendations, the collection and sharing of data regarding long-term stewardship, and the importance of supporting STEM education and outreach in tribal communities. During his remarks, Melendez encouraged tribal leaders to be their own advocates and invited them to come to DOE with a plan. He stated that DOE has resources and the desire to support many of their ideas, but that they are in the best position to know the needs of their community.

Undersecretary for Science Paul Dabbar addressed intergovernmental meeting attendees on November 15 and emphasized DOE Secretary Rick Perry's and the administration's commitment to STEM education and outreach. Later that day, Melendez reiterated this commitment during his opening remarks for the panel on STEM, workforce development, and knowledge transfer.

Melendez provided statistics on the aging workforce and challenged the audience to think about actions they can take to inspire the future workforce and ensure they are prepared to take on mission-critical tasks associated with the cleanup of the nuclear weapons complex. He stressed that "there is no one-size-fits-all model to address these challenges," but

that "we all have a moral obligation to act." A lively panel and audience discussion followed Melendez's remarks, with attendees sharing best practices and examples of successful outreach they have done in their communities.

This is the third time Melendez has been invited to speak at the STGWG and Intergovernmental Meetings, and he said every time he attends he learns something new. "I was, again, profoundly enlightened by the robust dialogue with our intergovernmental and tribal partners that yielded invaluable insights into long-term stewardship of DOE sites." ❖



LM Director Carmelo Melendez addresses participants in the 2018 State and Tribal Government Working Group and Intergovernmental Meetings in New Orleans, Louisiana.



Grand Junction, Colorado, Office Celebrates 75 Years with Photo Exhibit



Top Row Above: A portion of the photo exhibit at Grand Junction City Hall showcasing the area's 75-year contribution to the nation's defense program. Bottom Row Above: Left to right: Karen Keeler, the 1955 Miss Atomic Energy, reaches for her prize: a ton of uranium ore. Army Second Lieutenant Philip C. Leahy established offices in 1943 for the U.S. Army Corps of Engineers Colorado Area Office at Third and Main streets. A geologist records data for the National Uranium Resource Evaluation (NURE) Hydrogeochemical and Stream Sediment Reconnaissance (HSSR) program in the Rawah Wilderness in Colorado (1977).

In August, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) in Grand Junction, Colorado, installed a temporary photography exhibit at Grand Junction City Hall marking the 75th anniversary of the city's role in the Manhattan Project.

The exhibit, "DOE Grand Junction Office Marks 75 Years of Contribution to the Nation's Defense Program," displays photos of western Colorado and its residents during World War II, through the Cold War uranium boom, and the ensuing cleanup and reuse efforts to address uranium-legacy environmental issues in the area.

"Getting to exhibit in City Hall has been a great opportunity for Legacy Management to share some of the images we have with the community," said LM Program Analyst Padraic Benson. "The photos on display help tell the uranium story, and the city of Grand Junction has been very much at the center of that story for three-quarters of a century."

On July 26, 2016, the Grand Junction office site was listed on the National Register of Historic Places in recognition of its important, historical roles in the Manhattan Project and the Cold War. The complex along the Gunnison River south of Grand Junction traces its origins to 1943 when the U.S.

government purchased a former gravel mine and log cabin/office as a uranium processing site for the U.S. Army Manhattan Engineer District.

The office site later housed the U.S. Atomic Energy Commission Colorado Raw Materials Office, the nexus of an unprecedented uranium boom fueled by the government's need to secure domestic uranium for nuclear weapons during the Cold War.

The photo exhibit included a special thanks to LM's friend and colleague, Bill Chenoweth, a geologist who researched DOE history in Grand Junction, and also donated some of the photos used in the exhibit.

In addition to photographs, there was an exhibit showcasing Gordon Babbel, a 1940s uranium prospector and self-taught inventor of the rugged and compact Babbel counter. Babbel's son, William Babbel, donated an original Babbel counter, which will be on permanent display at the historic log cabin on the Grand Junction site when it opens to the public as the Atomic Legacy Cabin interpretive center.

The exhibit was available for viewing through October 10 in the Grand Junction City Hall lobby. City Hall regularly hosts community exhibits that rotate on a quarterly basis. ❖



Shiprock Site Manager Hosts Tour, Gives Presentation to DURAC

U.S. Department of Energy (DOE) Office of Legacy Management (LM) Site Manager Mark Kautsky hosted the Diné Uranium Remediation Advisory Commission (DURAC) for a tour of the Shiprock, New Mexico, Disposal Site on September 26.

The next day, Kautsky gave a presentation to DURAC members and community members at the Shiprock Chapter House on historical aspects of the former uranium mill, including the story of Kerr-McGee Oil Industries, which built the mill in the 1950s and operated it until the mid-1960s.

Kautsky explained how DOE and the Navajo Nation entered into a cooperative agreement to clean up the radioactive tailings in 1983, after the community had been exposed to material for decades. He also addressed groundwater contamination

at the site and ongoing remediation operations in different sections of the site.

Both events included dialogue and questions among tribal and federal agencies and community members.

“It is truly a privilege to work here and to get to know members of this community,” said Kautsky. “I hear your concerns, I feel your concerns. I am trying, but I know I will never completely understand what it’s like to grow up with a tailings pile in my backyard or in my community.”

The Shiprock disposal site, a Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I site, is licensed to DOE for custody and long-term care under LM’s management. The site transferred to LM in 1996 and requires routine inspections and maintenance, records-related activities, and stakeholder support. ❖



Clockwise from above: During a September meeting, LM Shiprock Site Manager Mark Kautsky provided a site update to DURAC members and the Shiprock community. Kautsky addresses members of DURAC and other federal and tribal agencies, during a September site tour. Members of DURAC and other federal and tribal agencies question Kautsky about the Shiprock disposal cell.



Invertebrates Thrive at the Fernald Preserve, Ohio, Site

Even the tiniest inconspicuous, invertebrate resident may be a critical building block in a healthy habitat that can support a stable, diverse population of plant and animal community members. Butterflies, moths, beetles, dragonflies, and fireflies are abundant this year in the ecologically restored Fernald Preserve prairie, wetland, and forest habitats. The Fernald Preserve is a regionally recognized birding destination.

Environmental scientists at the Fernald Preserve have supported a recovery plan for the federally endangered American burying beetle since 2013. The U.S. Department of Energy Office of Legacy Management maintains a cooperative agreement with the U.S. Fish and Wildlife Service and the Cincinnati Zoo to work with this species. They have released American burying beetles each spring at the site for past six years. The ultimate goal is to retrap adult beetles that have overwintered on the site, indicating a new population is successfully establishing at the preserve. Although this gold standard has not yet been achieved, 2018 has yielded the best results yet during summer post-release monitoring. A number of offspring were observed in July and August. Parent beetles are marked prior to their spring release to make it easier for field personnel to identify offspring during summer monitoring efforts.

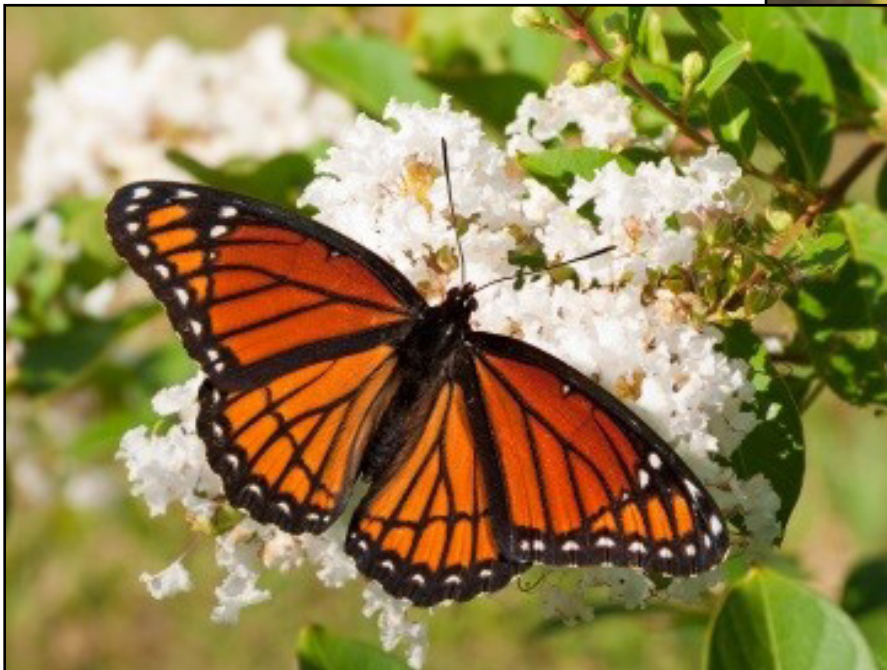
An Ohio endangered moth, called the “unexpected cynthia,” was discovered in August eating milkweed plants growing in the Visitors Center landscaping. Like many other milkweed insect

inhabitants, this white moth sports an orange “safety vest.” Its orange warning color shows beneath tufts of hair that adorn the caterpillar.

Two large, charismatic orange butterflies, the monarch and the viceroy, have been seen in abundance this season. Monarch butterfly caterpillars also feed on milkweeds, while the viceroy feeds on willow leaves. Both plants are readily found on-site.

Earlier in the summer, visitors enjoyed evening expeditions into the natural areas at the Fernald Preserve where fireflies presented light shows of subtly varying patterns and colors. Several firefly species are present at the Fernald Preserve, each one unique in its flash pattern, flash time, and preferred habitat.

Summer also brings an array of dragonfly and damselfly species in various shades of red, green, blue, and brown. Dragonflies lay their eggs in water. They do this by touching the tip of their long abdomen to the water surface, an amazing show readily observed in the restored wetlands. ❖



Above: The Twelve-spotted skimmer is a large, striking dragonfly seen over the wetlands at Fernald Preserve. Left: Both the Viceroy (shown here) and the Monarch are appearing in abundance in southwest Ohio this year.



New Employee Bios

Peter O'Konski

Peter O'Konski became the deputy director of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) in June 2018.

Previously, O'Konski was director of the Office of Administration where he was responsible for logistics and facility operations at the Forrestal, Washington, and Germantown, Maryland, complexes, as well as other mission-critical headquarters functions, including facility operations, space management, safety and health, printing, media production, graphics, transportation and international travel. Prior to this position, O'Konski was director of facility policy and professional development within the Office of Engineering and Construction Management, where he was responsible for developing DOE facility management policy, which emphasized maintenance, master planning, and life-cycle cost management of the Department's \$100 billion real property portfolio. He also led the Department's Project Management Career Development Program to include policy formulation, Certification Review Board activities, and course development.

Before joining DOE, O'Konski was chief engineer at the Navy Public Works Center, where he was responsible for all design and engineering services for Navy facilities in the Washington Capital Region. Prior to that position, O'Konski served as the utilities director managing generation, distribution, and delivery of steam and chilled water from eight plants, as well as distribution of high-voltage electricity and water. As utilities director, he implemented a Most Efficient Organization program after successfully leading his department through a commercial activities study.

O'Konski holds a bachelor's degree in mechanical engineering from the Catholic University of America, a master's degree in fire protection engineering from the University of Maryland, and a Master of Business Administration from George Mason



University. He is a licensed professional (mechanical) engineer in the State of Maryland, a certified energy manager, a Leadership in Energy and Environmental Design (LEED)-accredited professional, and a certified cost engineer.

Orlyn "Bruce" Akers

Orlyn "Bruce" Akers, personal property manager, was raised in American Falls, Idaho. After graduating from high school, he joined the U.S. Army, retiring in 1996 with 23 years of active duty military service. He is a graduate of Columbus University in Georgia with a Bachelor of Arts degree in political science.

Ackers worked as a logistics manager specialist with the DOE National Nuclear Security Administration (NNSA) at Fort Chaffee, Arkansas; an organizational property management officer with DOE Nuclear Energy at Idaho Falls, Idaho; and the government property administrator with the Department of the Army at the Iowa Army Ammunition Plant in Middletown, Iowa.

He joined LM in June 2018, and is currently the organizational property management officer in Grand Junction, Colorado.

Quin Clyburn

Quin Clyburn joined the DOE Executive Operations Team as a program analyst. Clyburn is a graduate of Strayer University in Washington, D.C., where she earned her degree in human resources (HR) management, and minored in business administration. Prior to joining the HR Team, Clyburn contracted with the NNSA in 2014 as a senior executive administrator. In this role, she supported the NNSA director with executive travel and administrative needs. She also worked for the U.S. General Services Administration as an administrative assistant II and with the Amyotrophic Lateral Sclerosis (ALS Association) as an executive assistant during the Ice Bucket Challenge. Clyburn became a full-time LM employee in September 2017 with the Human Resources Team, now known as the Executive Operations Team.

Dante Tan

Dante Tan joined the Office of Site Operations in July 2018 as an environmental protection specialist after working for the DOE Office of Asset Management as an industrial property manager. Prior to his work in the federal service sector, Tan served in the U.S. Navy Seabees continuously for 25 years, participating

Continued on page 33



American Burying Beetle Recovery Agreement Renewed at Fernald Preserve

The U.S. Department of Energy Office of Legacy Management has renewed its agreement with the U.S. Fish and Wildlife Service (USFWS) and the Cincinnati Zoo to participate in a recovery program for the federally endangered American burying beetle (*Nicrophorus americanus*) at the Fernald Preserve, Ohio, Site. The agreement allows beetles raised by the Cincinnati Zoo to be released at the Fernald site annually through 2022.

American burying beetles use a small carcass, the size of a chipmunk or a dove, as a host for their offspring. The beetles

bury the carcass and lay eggs nearby, then care for the larvae as they grow, feeding on the carcass. This process helps to recycle nutrients back into the soil.

According to the USFWS, the range of the beetle has been reduced from 35 to four states. They are able to thrive in a wide variety of environmental conditions, and were historically found in varied habitats ranging from grassland to forests. Despite this adaptability, beetle populations have plummeted and scientists believe food chain disturbances may have contributed significantly to their decline. Scientists study carrion beetles as a potential “indicator species,” that can provide clues to the health of an ecosystem.

Recovery efforts in Ohio have been ongoing since 1998. The Fernald Preserve is recognized as an ideal location for release because of its varied habitat and proximity to the Cincinnati Zoo. ❖

The striking and distinctive endangered American burying beetle will continue to be released at the Fernald Preserve in support of the USFWS effort to expand its dwindling range.



Continued from page 32

New Employee Bios

in numerous expeditionary engagements from Operation Desert Shield to the global war on terrorism, as well as humanitarian and consequence management missions. During his military service, Tan worked as an oceanographic surveyor, geotechnical engineer, quality control inspector, radiation safety officer, construction inspector, asbestos program manager, environmental and natural resources program coordinator, and military and technical training instructor, while achieving designations as master training specialist and Seabee combat warfare specialist. After retiring from naval service in 2008 as a senior chief, he worked for various U.S. Department of Defense components as space planner, project manager, facilities manager, and operations coordinator. Tan has a Bachelor of Science degree in aeronautical engineering from the State University of New York and master's degrees in management and human resources development from Webster University.

David McNeil

David McNeil comes to the LM Asset Management Team from the NNSA in Albuquerque, New Mexico, where he worked as a realty specialist and a real estate contracting officer since September 2013. During his time at NNSA, McNeil was the realty lead for several high-profile DOE real estate projects including the Pantex Administrative Support Complex and the disposal of the Bannister Federal Complex in Kansas City. He also led numerous other NNSA land management initiatives nationwide. Before transferring to DOE and NNSA in October 2017, McNeil was a civilian realty specialist for Headquarters Air Force Civil Engineering, where he was actively involved in some of the Air Force's highest profile real estate projects worldwide. He also led the real estate development for some of the Air Force's largest renewable energy projects. ❖



LM NEWS Feed

Visit <https://energy.gov/lm/listings/lm-news> to access these articles in the LM NEWS Feed.

DECEMBER 31, 2018

Fanatastic Beasts of the Harry Potter World Featured at Fernald Preserve

Visit LM's Fernald Preserve, Ohio, Site of January 5 to celebrate the fantastic world of birds.

DECEMBER 21, 2018

Exhibit Features Photography and History of Grand Junction During the Atomic Era

During a recent exhibit, the U.S. Department of Energy Office of Legacy Management shared the history of the uranium boom in Grand Junction, Colorado.

DECEMBER 14, 2018

LM Celebrates 15 Years

The DOE LM celebrates 15 years of ensuring DOE's post-closure responsibilities for human health and the environment at legacy sites are met.

NOVEMBER 7, 2018

Mound T Building Sale Good for Economic Growth

Former DOE defense facility property sold to communications technology company.

OCTOBER 30, 2018

DOE Bluewater Disposal Site Tour a Success

On October 25, 2018, DOE provided a public tour of its Bluewater, New Mexico, Disposal Site.

OCTOBER 26, 2018

Keeping your Personal and LM Online Lives Cyber Secure

LM's cyber security practices include participation in National Cyber Security Awareness Month.

OCTOBER 22, 2018

DOE Bluewater Disposal Site Tour

On October 25, 2018, DOE will provide a public tour of its Bluewater, New Mexico, Disposal Site.

OCTOBER 3, 2018

Fernald Preserve Selected as a Regional "Greenspace Gem"

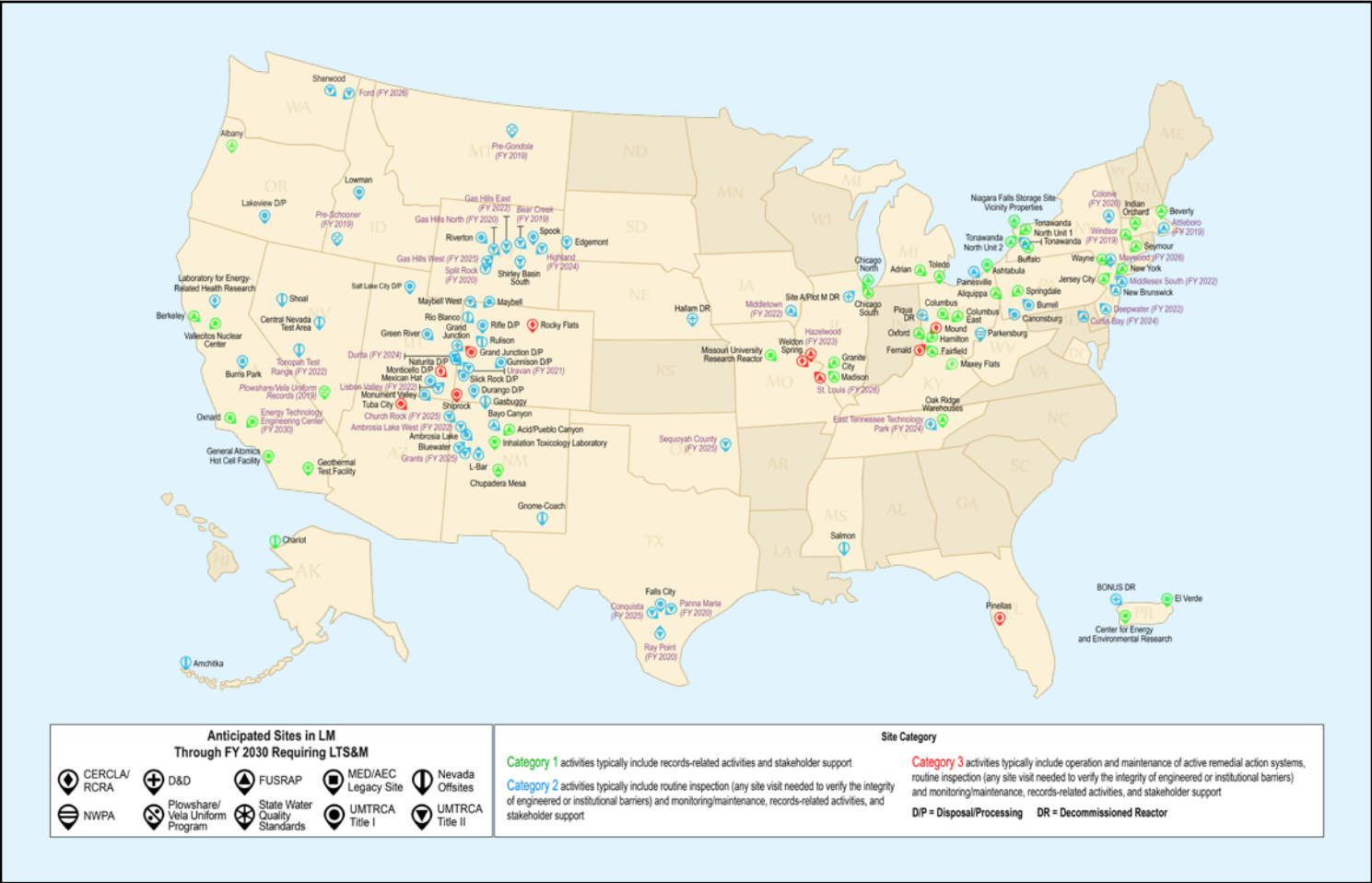
The Fernald Preserve was recently selected as a regional "Greenspace Gem" by Green Umbrella.

OCTOBER 3, 2018

DOE Releases 2017 Annual Historical Summary

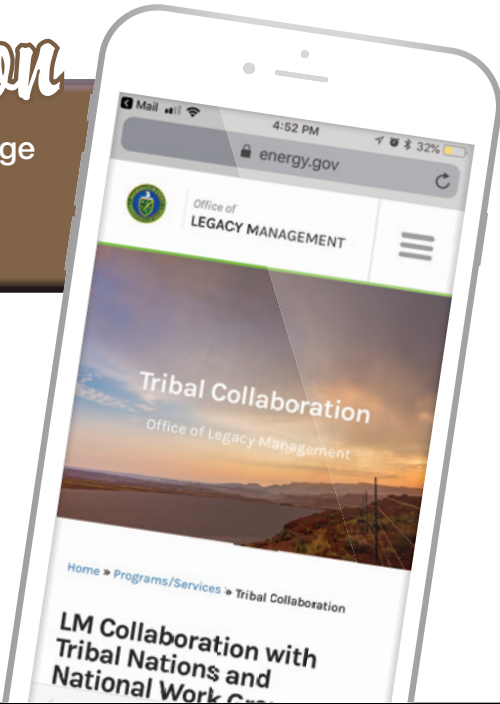
This document records major accomplishments that LM achieved in calendar year 2017. The intent is to provide a record for future generations.

Anticipated LM Sites Through Fiscal Year 2030



Tribal Collaboration

Check out our new tribal collaboration webpage at <https://www.energy.gov/lm/programs-and-services/tribal-collaboration>



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For up-to-date LM news, be sure to visit LM's website and LinkedIn page.



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Mail: Krystyna Frolich
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